

REMARKS

This amendment is being filed in response to the Office Action dated January 21, 2003. For the following reasons, this application should be considered in condition for allowance and the case passed to issue.

Claim 5 was objected to as being of improper dependent form. This rejection has been obviated by the cancellation of claim 5.

Claims 1, 3 and 7 were rejected under 35 USC §102(e) as being anticipated by Woo, et al., (hereinafter "Woo"). Claims 2 and 4-6 were rejected under 35 USC §103(a) as being unpatentable over Woo in view of Funai et al. (hereinafter "Funai"). These rejections are hereby traversed and reconsideration and withdrawal thereof are respectfully requested.

Claim 1 of the present invention describes a method of passivating a silicon nitride spacer that includes, among other features, depositing a layer of silicon oxide over silicon nitride spacers and the horizontal surface of the semiconductor substrate and the horizontal top surface of the gate electrode. Claim 1 has been amended to include the limitation that the silicon oxide has a thickness of between 20 and 45 Å. The thin oxide layer having a thickness of between 20 and 45 Å serves to prevent the bridging of the nickel silicide between the drain and source regions. The claimed range of thickness means the silicon oxide is very thin, which has a number of advantages, including allowing the overall dielectric constant of the device to be lower. Reducing the size of the silicon oxide spacer reduces the overall k value. Another advantage is the greater control of the oxide of the local process since a greater amount of oxide does not need to be removed. Further, a thinner silicon oxide spacer layer allows greater silicide coverage

on the source and drain regions 13 and 14. This lowers the contact resistivity of the source and drain regions. Furthermore, the thinner oxide layer allows for faster etching and increased throughput.

Woo, U.S. Patent No. 6,507,123, describes a nickel silicide process using Udox to prevent silicide shorting and includes, among those steps, the formation of second sidewall spacers 39, 41 that are from about 50 to 200 Å. The second sidewall spacers 39, 41 are formed from a material that is substantially non-reactive with nickel, so that nickel silicide formation on the second sidewall spacers 39, 41 during subsequent processing will advantageously be reduced or prevented.

Hence, claim 1 as amended includes a thickness of silicon oxide between 20 and 40 Å, which is substantially lower than the about 50 to 200 Å, recited by Woo for the second sidewall spacers 39, 41. In order to anticipate a reference under 35 USC §102(e), the prior art reference must identically disclose each and every element or step of the claimed invention. In this case, since Woo fails to disclose depositing a layer of silicon oxide having a thickness of between 20 and 40 Å, Woo cannot anticipate claim 1 of the present invention. Nor does Woo make obvious the claims of the invention under 35 USC §103(a) as it does not take into account the considerations of a thinner oxide layer.

It is respectfully noted that:

The present application, Serial No. 09/919,943 and U.S. Patent No. 6,507,123, were, at the time the invention of application U.S. Serial No. 09/919,943 was made, owned by Advanced Micro Devices, Inc.

The above statement alone is sufficient evidence, as stated in MPEP §706.02(I)(2) to disqualify U.S. Patent No. 6,507,123 from being used in the rejection under 35 USC

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§103(a) against the claims of the present application. Accordingly, the rejection of all of the claims should be reconsidered and withdrawn as Woo does not anticipate amended claim 1, nor can be used in a rejection under 35 USC §103(a) as evidence has been provided to establish common ownership of the present application and Woo.

In light of the amendments and remarks above, this application should be considered in condition for allowance and the case passed to issue. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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